

XLII. *An Account of the Earthquakes that have been felt in the Province of Islamabad, with the Damages attending them, from the 2d to the 19th of April, 1762: Translated from the Persian, and communicated to Henry Vansittart, Esq; President and Governor of Fort William in Bengal, by Mr. Verelst, Chief of the Hon. East India Company's Affairs at Islamabad.*

Read Nov. 17, 1763. **T**HE weather being very close and warm for some days preceding, on the 2d of April, about 5 in the afternoon, we were alarmed by an earthquake; which beginning with a gentle emotion, increased to so violent a degree, for about two minutes, that the trees, hills, and houses shook so severely, that it was with difficulty many could keep their feet, and some of the black people were thrown on the ground; whose fears operated so powerfully, that they died on the spot; others again were so greatly affected, that they have not recovered themselves since.

On the plains, by the rivers, and near the sea, it was chiefly felt with great severity.

Our bungaloos proved very convenient on so melancholy an occasion; for had we been in brick houses, they must inevitably have been shattered or levelled with the ground; as there is not a brick wall or house but is either greatly damaged or fallen.

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Our new room in the fort, though as strong as bricks and chunam could make it, is shivered on all sides from bottom to top ; and the old building equally cracked is in great part tumbled down.

The ground opened in several places in the town, throwing up water of a very sulphurous smell ; and several ditches and tanks were filled up, which are now level dry land.

The emotions were so complicated, that we could not well determine their direction ; being sometimes from west to east, and again from east to west ; and the tanks in some places overflowed north and south.

In Purgunnah Deang, Bursea Gong, the ground in several places opened ten and twelve cubits wide ; and in some parts so deep, that they could not fathom its bottom ; the water immediately overflowing the whole town, which is sunk about seven cubits.

Deep Gong, a village near the other, is also sunk, and now lies seven cubits under water.

From Patter Gottah to Howlah, about 8 cefs distance, the ground opened, and a great quantity of water was immediately thrown out, and in several places the ground entirely sunk.

At Bans Burreah, Akul Poor, near the sea, the earth opened in seven places, like wells, throwing up the water ten cubits high : the great Cutcherry there, with brick walls, is cracked and shivered to pieces.

At Hulda Creek, near Sancharam Conguy's house, twelve don of ground is entirely sunk.

In the Purgunnah Do Hazarree, Hurry Sing Hazarree's brick house was entirely thrown down : the hall of Seer Jumma Cawn's brick house also fell, and himself

himself was greatly hurt by the bricks : near which the ground opened 200 cubits, and immediately filled with water, which is now unfathomable.

In Howla Purgunnah, Sam Roy Gaffildar's house broke down, and his compound was filled with water of two cubits deep for two days.

In Berrum Cherra, the ground overflowed about two cubits deep.

The hall of Santaram Conguy's brick house fell down, and killed one of his relations.

Near Cutcha Gaut, Kurrolea hill opened, and a great part of it fell into the river.

Bazally Creek, and Do Hazarry Creek, are both stopped up.

At Gunderub Juwar, three don of ground is entirely funk.

Ali Chowdry's compound opened, and the water, that immediately flowed out, filled a deep ditch, that surrounded his house.

From Sawabill Purgunnah to Mooradabad, three Taluckdar's grounds are entirely sunk, and four people killed.

At Bar Chara, near the sea, five or six cefs of ground immediately sunk, and out of four or five hundred people, above two hundred were lost, with all their cattle ; and the greatest part of the remaining inhabitants, who ran into the woods, have not yet been heard of.

Nulla Nundaram's brick house was broken down ; and his son, who was then in it, was so much bruized, that he died in three days afterwards.

At Lafettee Silcope Chuckla the ground in some places opened, and threw up great quantities of salt

water, and in others entirely sunk : the channels of several creeks and little vallies between the hills were filled up with great quantities of sand : in some parts the water still continues twenty cubits deep, and in others unfathomable.

Silluk creak, and Issamuttee river are both stopped up ; several boats laden with goods then coming down are not now able to get out of them : the country around there opened greatly in some places, and in others entirely sunk ; and a great many tanks filled with sand.

Bur Coller hill opened about forty cubits wide.

Cefs Lung Joom hill, one of the Mug mountains, is entirely sunk.

Chunggee hill opened between twenty and thirty cubits.

Puddooh creek, at that time without water, opened, and threw up two hills of sand ; and all the houses in these parts were broke down.

Joom Chater Pedea hill, is sunk so low, that its top is now on a level with the plains.

Rigerree hill, which was very large, opened thirty cubits wide.

Joom Palang hill opened twenty-five cubits.

By the accounts already come in, there are 120 \* Dons of ground lost in different parts of the province; but these I am afraid will not be one eighth part of the whole damages, as we have further relations coming in every hour.

\* One sye don of ground is 1920 cubits long, and 1600 cubits broad.

As we are informed, that there are two vulcanoes opened, I am in great hopes these will prove a sufficient vent to discharge all the remaining sulphurous matter in the bowels of these countries, and put a stop to any further earthquakes here; at least for many years to come.

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XLIII. *A Letter from the late Reverend Mr. Thomas Bayes, F. R. S. to John Canton, M. A. and F. R. S.*

SIR,

Read Nov. 24, 1763. IF the following observations do not seem to you to be too minute, I should esteem it as a favour, if you would please to communicate them to the Royal Society.

It has been asserted by some eminent mathematicians, that the sum of the logarithms of the numbers 1. 2. 3. 4. &c. to  $z$ , is equal to  $\frac{1}{2} \log. c + \frac{1}{2} \log. z$  lessened by the series  $z - \frac{1}{12z} + \frac{1}{360z^3} - \frac{1}{1260z^5} + \frac{1}{1680z^7} - \frac{1}{1188z^9} + \dots$  &c. if  $c$  denote the circumference of a circle whose radius is unity. And it is true that this expression will very nearly approach to the value of that sum when  $z$  is large, and you take in only a proper number of the first terms of the foregoing series: but the whole series can never properly express